Proposal to replace the Wisconsin Power & Light Substation at Neopit

Desired completion date; Winter 2012/2013

Finding of Facts

Existing Alliant Energy/WPL Substation at Neopit;

- The 34.5/12.47 kV substation is located on former railroad right-of-way, now jointly held by Menominee Indian Tribe of Wisconsin and Menominee Tribal Enterprises; by virtue of a December 1962 railroad right-of-way easement with Menominee Tribal Enterprises.
- The breaker's vintage is 1955 and the three 1.5 MVA transformers are 1949 vintage (Obsolete design)
- Alliant Energy/WPL Departments of Customer Service, Maintenance, Engineering and Distribution Planning have requested that the Neopit substation be replaced due to age, reliability, design and condition concerns
- In addition to the age, condition and design concerns; a history of vandalism at the current location resulted in a request to relocate the substation

Planning Options

- Replace existing equipment upon failure
- Planned replacement at current location
- Relocate the substation to the northeast corner of the MTE Mill property, just west of the former railroad bed location, allowing for better service access, greater reliability, visibility and security

Analysis of planning options

- Replacement of failed obsolete equipment will result in outages, diminished reliability and greatest total cost
- Replacement at current location, planned or reactive, leaves the site vulnerable to outages, vandalism, diminished reliability due to obsolete components and limited capacity
- Relocate to new 100’ x 140’ site* on the northeast corner of the MTE Mill property, just west of the former railroad bed

  ***New substation fenced area is .0427 acres, about 2 ½ times the size of a basketball court**
- Replace approximately 0.5 miles of distribution line with double circuit 34 kV line and extending north from the existing substation site, on the former railroad bed, to the new substation

Replace at Failure
Pro(+) vs Con(-)

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- Substation remains at existing location

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- Least levels of safety, reliability and security
- Continuously declining equipment reliability
- Service outages
- Lost production at MTE
- Limited capacity to serve future growth
- Inconvenience and disruption to WPL residential Neopit customers
- Heightened consequences of equipment failure
- Catastrophic failure of power transformer(s) results in loss of no cost MTU spares
- Greatest total cost

Planned replacement at existing location Pro(+) vs Con(-)

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- Substation remains at existing location
- The three replaced power transformers become no cost spares to the MTU Substation at Middle Village

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- Low levels of safety, reliability and security
- Continuously declining equipment reliability
- Service outages
- Lost production at MTE
- Limited capacity to serve future growth
- Inconvenience and disruption to residential Neopit WPL customers

Relocation
Pro(+) vs Con(-)

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- Greatest levels of safety, security and reliability
- No construction outage(s)
- New equipment reliability
- Increased capacity to serve future growth
- No costs to MITofW, or MTE
- The three replaced power transformers become no cost spares to the MTU Substation at Middle Village
- Provides MTE with additional secured site access and improved perimeter security

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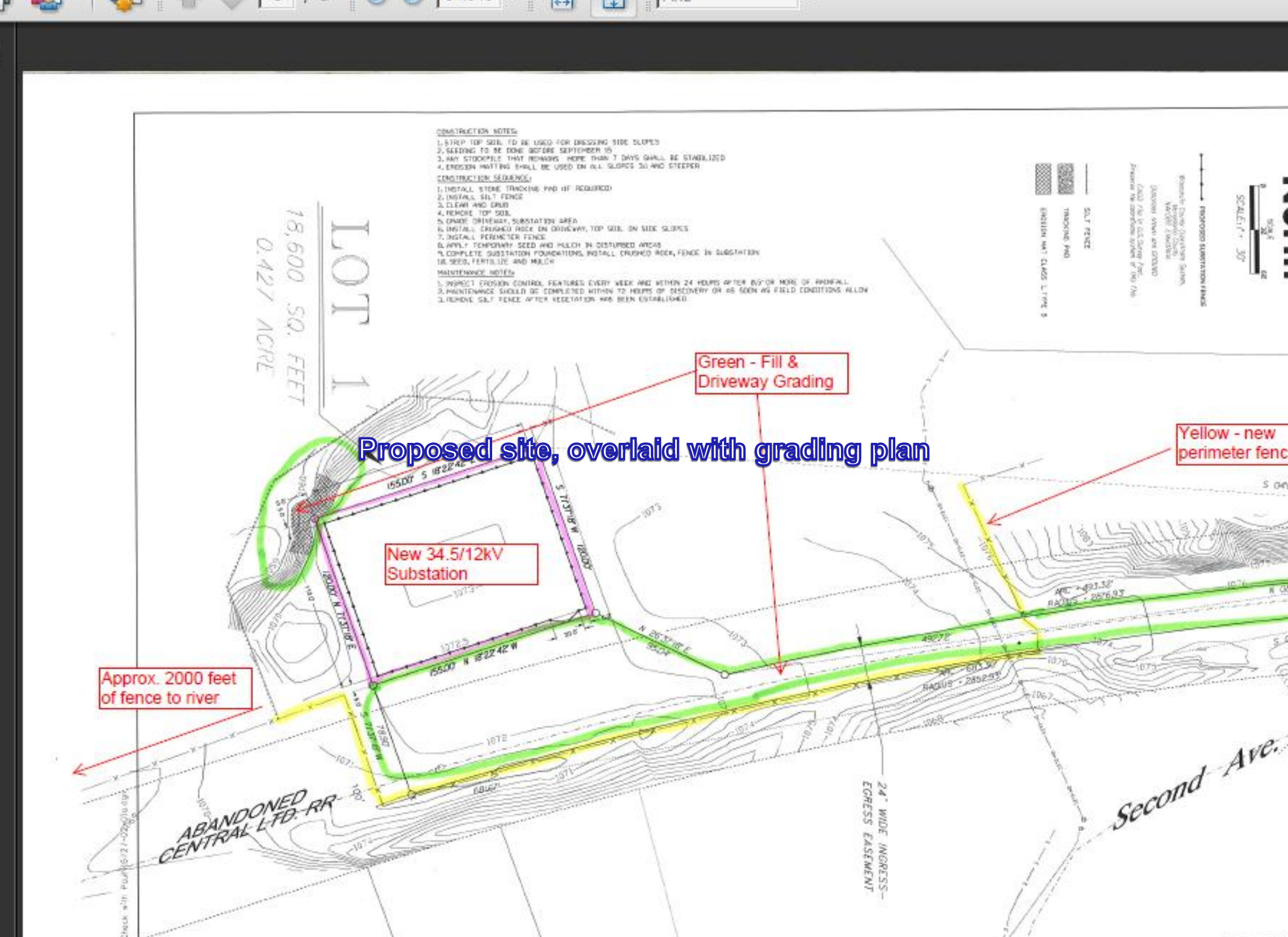
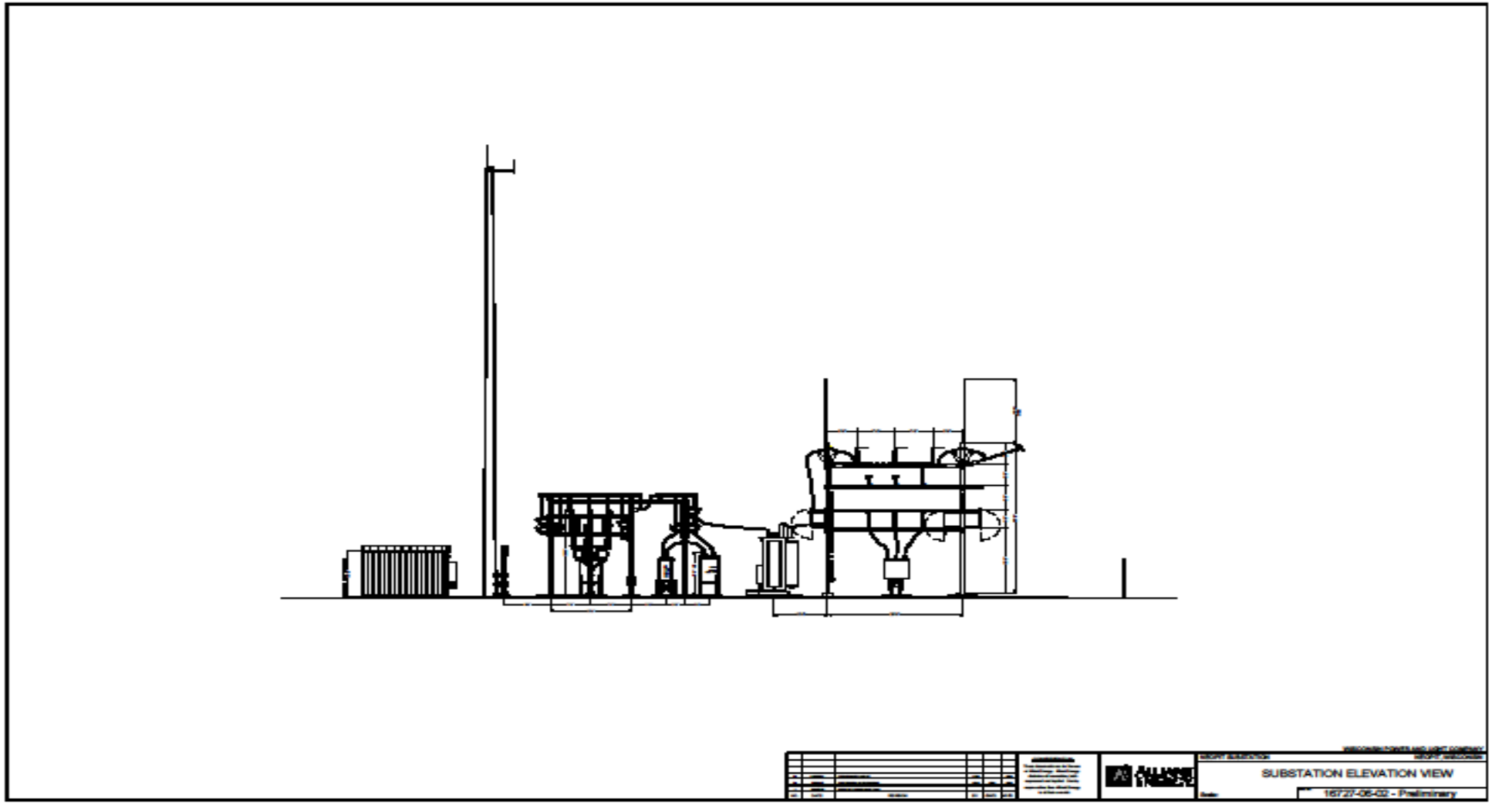
- Overhead lines and poles over Hwy 47, and north


New Subst.
Site & 34.5kV
line route
North St
Water St


Proposed site, overlaid with grading plan
Green - Fill & Driveway Grading
Yellow - new perimeter fenc
New 34.5/12kV Substation
Approx. 2000 feet of fence to river
LOT 1
18,600 SQ. FEET
0.427 ACRE
ABANDONED CENTRAL L-TD. RR
24' WIDE INGRESS - EGRESS EASEMENT
Second Ave.
CONSTRUCTION NOTES:
1. STRIP TOP SOIL TO BE USED FOR DRESSING SIDE SLOPES
2. SEEDING TO BE DONE BEFORE SEPTEMBER 15
3. ANY STOCKPILE THAT REMAINS MORE THAN 7 DAYS SHALL BE STABILIZED
4. EROSION MATTING SHALL BE USED ON ALL SLOPES 3:1 AND STEEPER
CONSTRUCTION SEQUENCE:
1. INSTALL STONE TRACKING PAD (IF REQUIRED)
2. INSTALL SILT FENCE
3. CLEAR AND GRUB
4. REMOVE TOP SOIL
5. GRADE DRIVEWAY, SUBSTATION AREA
6. INSTALL CRUSHED ROCK ON DRIVEWAY, TOP SOIL ON SIDE SLOPES
7. INSTALL PERIMETER FENCE
8. APPLY TEMPORARY SEED AND MULCH IN DISTURBED AREAS
9. COMPLETE SUBSTATION FOUNDATIONS, INSTALL CRUSHED ROCK, FENCE IN SUBSTATION
10. SEED, FERTILIZE AND MULCH
MAINTENANCE NOTES:
1. INSPECT EROSION CONTROL FEATURES EVERY WEEK AND WITHIN 24 HOURS AFTER 0.5" OR MORE OF RAINFALL
2. MAINTENANCE SHOULD BE COMPLETED WITHIN 72 HOURS OF DISCOVERY OR AS SOON AS FIELD CONDITIONS ALLOW
3. REMOVE SILT FENCE AFTER VEGETATION HAS BEEN ESTABLISHED
SILT FENCE
TRACKING PAD
EROSION MAT CLASS 1 TYPE B
PROPOSED SUBSTATION FENCE
SCALE: 1" = 30'
155.00' S 18°22'42" E
S 71°37'18" W 120.00'
120.00' N 71°37'18" E
155.00' N 18°22'42" W
N 26°37'18" E
95.04'
492.72'
ARC = 493.38'
RADIUS = 2876.93'
ARC = 603.36'
RADIUS = 2852.93'
78.92'
68.66'

Substation Elevation View



Substation design example: Shawano Substation

Landscaping design example: Shawano Substation

Landscaping design example: Shawano Substation

Relocated Substation Construction Schedule

From ground breaking to completion: 48 weeks

- Material & equipment procurement, storm water control plan; engineering & design: 20 weeks
- Site preparation: 3 weeks
- Below grade and foundation: 3 weeks
- Above grade construction: 3 weeks
- Transmission construction: 12 weeks
- Landscape visible perspectives: 1 week
- Tie in and commissioning: 1 week
- Remove all above and below ground construction at former substation. Top soil dress and seed: 2 weeks

Vision for restored former substation site